CLAIM AMENDMENTS

1 – 19. (canceled)

20 (new). A method for location determination of mobile cell phones utilizing a plurality of base stations comprising the steps of:

a. transmitting a positioning request signal from a base station to a specified mobile cell phone;
b. receiving at each of said plurality of base stations a positioning response signal from said specified mobile cell phone to said base stations;
c. calculating at each of said plurality of base stations, a time delay value representing the time interval between transmission of a parcel of data from said mobile cell phone to said base stations, using a location device within each of said plurality of base stations,
d. transmitting said time delay values to a location database server; and
e. estimating the position of the mobile cell phone from data received at said location database server from each of said plurality of base stations;

whereby a determination of the location of the mobile cell phone is generated.

21 (new). The method of claim 20, whereIn the step of estimating the position of the mobile cell phone from data received at said location database server from each of said plurality of base stations employs a redundancy algorithm chosen to be consistent with the number of said plurality of base stations used for determining the mobile cell phone position, and further comprises the steps of:

a. compiling location information from each location device within each base station;

b. using said location information as input data to a calculation based on a wireless 3D hyperbolic model;
c. using said redundancy algorithm to calculate the estimated position of the mobile cell phone.

22 (new). The method of claim 21, whereIn the number of base stations is two, and the redundancy algorithm comprises the steps of:

a. identifying two rays, one from each base station, derived from angle-of-arrival of signal;
b. identifying two circular lines, one from each base station, calculated from attenuation of signal;
c. deriving a set of points based on the intersections of the rays and circular lines so dientified;
d. calculating an intermediate location estimator by averaging the points so derived;
e. identifying the closest endpoint as the intersection of the two circular lines that is closest to the intermediate location estimator; and
f. calculating a final location estimator by averaging the intermediate location estimator with the closest endpoint.

a1

23 (new). The method of claim 21, whereIn the number of base stations is three, and the redundancy algorithm comprises the steps of:

a. identifying three rays, one from each base station, derived from angle-of-arrival of signal;
b. deriving a set of three points at the intersection of the rays so identified;
c. calculating a first intermediate location estimator based on the set of points so derived;
d. identifying three circular lines, one from each base station

calculated from attenuation of signal;

e. deriving a set of four points from the intersection of the three circular lines;

f. calculating a second intermediate location estimator from the set of four points so derived; and

g. calculating a final location estimator using a weighted average of the first and second location estimators.

24 (new). The method of claim 21, whereIn the number of base stations is four, and the redundancy algorithm comprises the steps of:

a. receiving at each base station, a location signal using a BTS dual vibration antenna at each base station;

a1

b. measuring the time difference of arrival of the location signal among the four base stations; and

c. transmitting the time difference of arrival as input data to the location database server;

whereby the location database server computes the three-dimensional location of the mobile cell phone based on the input data.

25 (new). The method of claim 24, whereIn the mobile cell phone is substantially equidistant from all four base stations, whereIn the step of estimating the position of the mobile cell phone further comprises the step of performing an equirange configuration calculation.

26 (new). The method of claim 20, further comprising the steps of:

a. transmitting a location request from a specified mobile cell phone to a location database server;

b. retrieving the location of said specified mobile cell phone by the location database server; and

c. transmitting a message containing a representation of the mobile cell phone location from the location database server to said specified mobile cell phone; and

d. causing said specified mobile cell phone to display a representation of its current location.

27 (new). A system for location determination of mobile cell phones utilizing a plurality of base stations comprising:

a. first transmission means for transmitting a positioning request signal from a base station to a specified mobile cell phone;
b. receiving means for receiving a positioning response signal from said specified mobile cell phone to said base stations;
c. calculating means for calculating at each of said plurality of base stations, a time delay value representing the time interval between transmission of a parcel of data from said mobile cell phone to said base stations, using a location device within each of said plurality of base stations;
d. second transmission means for transmitting said time delay values to a location database server; and
e. estimation means for deriving the position of the mobile cell phone from data received at said location database server from each of said plurality of base stations;

28 (new). The system of claim 27, wherein said estimation means comprises a location device, a plurality of correlators within each said location device, a plurality of threshold devices, each said correlator having its output fed to the

input of a respective threshold device, the output of each said threshold device and the output of time slot window frames being input to a timing block, the output of said timing block being fed to a microprocessor, and a computer-readable medium containing instructions for execution by said microprocessor to calculate an estimated mobile cell phone position.

29 (new). The system of claim 28, whereIn the timing block comprises a plurality of logic-multiplier devices forming a conditioning circuit, said circuit receiving digital signals from output of at least one of said correlator, said circuit outputting pulses to the input of a counter module, whereby the counter module counts the number of pulses received during a predetermined duration, said number of pulses being used as an input to a microprocessor which performs calculations to compute a timing signal.

30 (new). The system of claim 28, whereIn the location device comprises a first receiver and first antenna and a second receiver and second antenna, the distance between the antennas being known, output of said second receiver being fed to a CDMA correlator, output of said CDMA correlator being fed to a timing block, whereby the timing block derives a time-difference-of-arrival timing signal.

31 (new). The system of claim 30, whereIn the output of the first and second receivers are fed to a phase meter, whereby the phase meter measures the differences between signals In the first antenna and second antenna.

32 (new). The system of claim 31, wherein an assembly generating an input to the phase meter comprises :

a. a first logic circuit;
b. a second logic circuit; and
c. an oscillator operating at 36.10^n Hz, where n is an integer;

wherein output of said oscillator is fed into a divider, and also fed into said second logic circuit; output of said second logic circuit is fed into said first logic circuit; output of said first logic circuit is fed into a counter;output of said counter is fed into a descrambler; andoutput of said descrambler is transmitted to the location database server; whereby the location data base server performs further processing to estimate the location of the specified mobile cell phone.

A1